

REMARKS/ARGUMENTS

Applicants thank Examiner Shosho for the helpful and courteous discussion of September 13, 2006. During the discussion, Applicants' U.S. representative pointed out that the specification of the present application discloses that carrying out multiple kneading operations on a pigment-containing mixture provides an ink that contains pigments of small particle diameter. Using pigment particles having a small particle diameter improves the filterability and handling characteristics of the resulting ink.

The presently claimed process requires kneading in two steps. A first kneading is carried out with a kneader while a second kneading is carried out with a roll-mill. The advantage of carrying out a second kneading with a roll-mill is disclosed in the paragraph bridging pages 6 and 7 of the specification, reproduced below for convenience.

In a kneaded mixture obtained by a kneader or a planetary mixer, coarse grains may be contained in some cases. Therefore, in this case, it is preferable that the kneaded mixture is further kneaded with a roll-mill. As the roll-mill, a double roll-mill or a triple roll-mill can be used. In the kneading, it is preferable to add water thereto. Also, kneading may be carried out in the roll-mill while evaporating the organic solvent from the kneaded mixture.

Thus carrying out two kneading steps provides a composition that contains fewer coarse grains. As stated on page 3, lines 2-3 of the specification, one of the objects of the present invention is to provide a process that prepares a pigment dispersion having a smaller average particle diameter. The use of two kneading steps helps accomplish the objects of the invention.

Previously presented Claim 3 was rejected as obvious in view of a patent to Ohta (U.S. 4,597,794). The Office asserts that the subject matter of previous dependent Claim 3 is obvious because column 7, lines 41-46 of Ohta disclose the equivalence and interchangeability of different types of compounding equipment. Applicants traverse the

rejection on the grounds that Ohta does not disclose or suggest the use of two kneading steps, one carried out with a kneader and one carried out with a roll-mill. Moreover, Ohta does not recognize that significantly improved average particle diameter can be obtained for the pigment dispersed within the prior art composition. In fact, a comparison of the average particle diameter of the particles present in the compositions obtained by the claimed process with the average particle diameters of the particles present in the Ohta compositions shows that the use of two kneading steps, as presently claimed, provides a composition that is substantially different from the Ohta composition. For example, Ohta discloses that the average particle diameter of the pigment in each of Examples 6-17 ranges from 0.46 to 2.4 microns (see column 15, line 46 and column 17, line 43, respectively). Applicants submit that those of ordinary skill in the art readily recognize that one micron is 1,000 nm and therefore the average particle size of the Ohta particles ranges from 460 to 2,400 nm. In contrast, the average particle diameter of the pigments in a composition made by the claimed process is about 150 nm (see Tables 1 and 2 on page 19 of the present specification). The particle sizes of the pigment particles present in the compositions obtained from the process of Ohta are substantially larger than the particle sizes of the pigment particles present in the compositions obtained by the claimed process.

Applicants submit that the disclosure of Ohta demonstrates that the prior art does not render the presently claimed process obvious. The patentability of the presently claimed process is evidenced by the disclosure in Ohta that the prior art process provides a composition having particles with an average particle diameter that is substantially larger than the average particle diameter of particles present in compositions obtained by the presently claimed process.

Thus, Applicants submit that those of ordinary skill in the art would not have been led to the presently claimed invention based upon the disclosure of Ohta.

Applicants request withdrawal of the rejection.

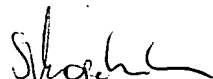
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